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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,569	09/09/2003	George Emanuel	KSY 02655 PTUS	3413
32233	7590	03/17/2009	EXAMINER	
STORM LLP BANK OF AMERICA PLAZA 901 MAIN STREET, SUITE 7100 DALLAS, TX 75202			KIM, CHRISTOPHER S	
			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/658,569	<b>Applicant(s)</b> EMANUEL, GEORGE	
	<b>Examiner</b> Christopher S. Kim	<b>Art Unit</b> 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 54,59 and 68-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 54,59 and 68-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 18, 2008 (duplicate of amendment filed November 3, 2008) has been entered.

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Election/Restrictions***

2. Reminder, applicant elected Invention I, Species A (figures 1-3) in the reply filed on November 4, 2005. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a curved sonic line

defining a transonic boundary” recited in claims 59 and 70; the "heating element" recited in claims 68 and 77 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 112***

4. Claims 59-65, 68-78 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 59 recites "An iodine injection system for injecting iodine into gas flowing through a nozzle for a laser comprising:..." The preamble indicates that the intended use of the iodine injection system is for injecting iodine into a gas flowing through a nozzle for a laser. The preamble suggests that the "gas," "nozzle" and "laser" are not positively recited limitations/elements of the iodine injection system. The preamble appears to be in conflict with the body of the claim which suggests that the nozzle and gas flow are elements within the injection system.

Claim 59 recites the limitation "the nozzle" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 59 recites the limitation "the flowing gas" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 59 recites the limitation "iodine" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 59 is directed to an apparatus but contains recitations directed to the manner in which the apparatus is operated, e.g., "a curved sonic line defining a transonic boundary" and "the gas flowing through the exit plane being generally supersonic and generally uniform." It is uncertain whether applicant is claiming an apparatus or a method of operating the apparatus. Arguably, if applicant's device is operated at subsonic flow, there is no curved sonic line defining a transonic boundary and no supersonic flow. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP 2113.

Regarding claims 60 and 61, it appears that the "kernel" region is defined in part by the manner in which the nozzle is operated. It would appear that applicant is attempting to claim an apparatus by the manner in which it is operated.

The term "near" in claim 60 is a relative term which renders the claim indefinite. The term "near" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what distance is defined by the claim.

Claim 63 recites the limitation "a carrier gas" in line 2. It appears to be a double inclusion of the "gas" recited in claim 59.

Claim 70 recites "An iodine injection system for injecting iodine into gas flowing through a nozzle for a laser comprising:..." The preamble indicates that the intended use of the iodine injection system is for injecting iodine into a gas flowing through a nozzle for a laser. The preamble suggests that the "gas," "nozzle" and "laser" are not positively recited limitations/elements of the iodine injection system. The preamble appears to be in conflict with the body of the claim which suggests that the nozzle and gas flow are elements within the injection system.

Claim 70 recites the limitation "the nozzle" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 70 recites the limitation "the flowing gas" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 70 recites the limitation "iodine" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 70 is directed to an apparatus but contains recitations directed to the manner in which the apparatus is operated, e.g., "a curved sonic line defining a transonic boundary" and "the gas flowing through the exit plane being generally supersonic and generally uniform." It is uncertain whether applicant is claiming an apparatus or a method of operating the apparatus. Arguably, if applicant's device is operated at subsonic flow, there is no curved sonic line defining a transonic boundary and no supersonic flow. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function.

Regarding claims 71 and 72, it appears that the "kernel" region is defined in part by the manner in which the nozzle is operated. It would appear that applicant is attempting to claim an apparatus by the manner in which it is operated.

The term "near" in claim 71 is a relative term which renders the claim indefinite. The term "near" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what distance is defined by the claim.

Claim 74 recites the limitation "a carrier gas" in line 1. It appears to be a double inclusion of the "gas" recited in claim 70.

***Claim Rejections - 35 USC § 103***

5. Claims 59-65, 69-76, 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinsley (4,206,426) in view of Dickerson (6,072,820).

Pinsley discloses an injection system comprising:

- a throat 26 at a first end of a nozzle 30, the throat having a sharp corner;
- a curved sonic line (resulting form curvature of nozzle 30);
- at least one injection strut 40, 92;
- an exit plane 32;

Pinsley discloses the limitations of the claimed invention with the exception of the iodine being injected through the strut 40, 92.

Dickerson teaches the use of iodine and helium.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used iodine in the device of Pinsley as taught by Dickerson for increased efficiency.

***Response to Arguments***

6. Applicant's arguments with respect to claims 59-65, 68-78 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571)



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272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Christopher S. Kim/  
Primary Examiner, Art Unit 3752

CK